



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2022-0872; Project Identifier AD-2022-00431-R; Amendment 39-22181; AD 2022-19-12]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Robinson Helicopter Company Helicopters**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is superseding Airworthiness Directive (AD) 2021-19-08, which applied to certain Robinson Helicopter Company (Robinson) Model R44 and R44 II helicopters. AD 2021-19-08 required checking each tail rotor blade (blade) for any crack and removing any cracked blade from service. AD 2021-19-08 also required removing all affected blades from service and prohibited installing any affected blade on any helicopter. Since the FAA issued AD 2021-19-08, it was determined that an additional model helicopter and additional blades are affected by the unsafe condition. This AD requires the same actions as AD 2021-19-08 and adds certain Robinson Model R66 helicopters to the applicability and adds additional part-numbered and serial-numbered blades to the applicability. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **ADDRESSES:**

*AD Docket:* You may examine the AD docket at [regulations.gov](https://www.regulations.gov) by searching for and locating Docket No. FAA-2022-0872; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West

Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** James Guo, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5357; email james.guo@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021) (AD 2021-19-08). AD 2021-19-08 applied to Robinson Model R44 and R44 II helicopters with a blade part number (P/N) C029-3 with serial number (S/N) 9410 through 9909 inclusive, installed. The NPRM published in the *Federal Register* on July 13, 2022 (87 FR 41627). The NPRM was prompted by reports of spanwise cracks found along the leading edge of P/N C029-3 blades, S/N 9410 through 9909. These affected blades were factory-installed or shipped as spares between March and December 2019. The cracks were found at different inspection intervals ranging from preflight inspections to 100-hour inspections. In one instance, a cracked blade was suspected when the pilot felt abnormal vibrations during flight; subsequent investigation determined that the blade was cracked. The cause of the cracks was determined to be a manufacturing defect in the properties of the blade skin that makes the blades prone to stress corrosion cracking. The NPRM was also prompted by a determination after AD 2021-19-08 was issued that an additional model helicopter and additional blades are affected by the unsafe condition. This condition, if not addressed, could result in reduced controllability and subsequent loss of control of the helicopter. AD 2021-19-08 required checking each blade for any crack and removing any cracked blade from service. AD 2021-19-08 also required removing all affected blades from service and prohibited installing any affected blade on any helicopter. In the NPRM, the FAA proposed to continue to require, before further flight and thereafter before each flight, checking each affected blade for any crack along

the leading edge of the blade. An owner/operator (pilot) holding at least a private pilot certificate may perform this check and would have to enter compliance with the applicable paragraph of this AD in the helicopter maintenance records in accordance with 14 CFR 43.9(a) and 91.417(a)(2)(v). A pilot may perform this check because it involves visually checking each blade for a crack. This action could be performed equally well by a pilot or a mechanic. This check is an exception to the FAA's standard maintenance regulations. The NPRM also proposed to continue to require, before further flight, removing from service any cracked blade and prohibit installing the affected blades on any helicopter. This NPRM also proposed to require, within three months after the effective date of AD 2021-19-08 or within six months after the effective date of this AD, as applicable, removing all affected blades from service. Finally, the NPRM revises the applicability of AD 2021-19-08 by adding blades with P/N C029-3 with S/N 9910 through 10659 inclusive to the applicability for Robinson Model R44 and R44 II helicopters and also expands the applicability of AD 2021-19-08 by adding Robinson Model R66 helicopters with blade P/N F-029-1 with S/N 2410 through 2589 inclusive installed.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

### **Conclusion**

The FAA reviewed the relevant data and determined that air safety requires adoption of the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.

### **Related Service Information**

The FAA reviewed Robinson R44 Service Bulletin SB-108, dated June 30, 2021. This service bulletin specifies removing P/N C029-3 blades with S/N 9410 through 9909 from service. For continued operation until the affected blades are replaced, the service

bulletin specifies a preflight inspection to be performed by the pilot.

The FAA also reviewed Robinson R44 Service Bulletin SB-110, which specifies removing P/N C029-3 blades with S/N 9910 through 10659 from service and Robinson R66 Service Bulletin SB-40, which specifies removing P/N F029-1 blades with S/N 2410 through 2589 from service. Both of these service bulletins are dated January 6, 2022, and specify that a preflight inspection is to be performed by the pilot for continued operation until the affected blades are replaced.

### **Costs of Compliance**

The FAA estimates that this AD affects 432 helicopters of U.S. registry. The FAA estimates the following costs to comply with this AD. Labor costs are estimated at \$85 per work-hour.

Checking a blade for any crack takes about 0.25 work-hour for an estimated cost of up to \$44 per helicopter (up to two affected blades per helicopter) and up to \$19,008 for the U.S. fleet per check. Replacing a blade takes about 3.5 work-hours and parts cost about \$3,320 for an estimated cost of \$3,618 per blade and up to \$3,125,952 for the U.S. fleet.

The FAA has included all known costs in its cost estimate. According to the manufacturer, however, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected operators.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority

because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

The FAA has determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by:

- a. Removing Airworthiness Directive 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021); and

- b. Adding the following new airworthiness directive:

**2022-19-12 Robinson Helicopter Company:** Amendment 39-22181; Docket No. FAA-2022-0872; Project Identifier AD-2022-00431-R.

**(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

This AD replaces AD 2021-19-08, Amendment 39-21726 (86 FR 49915, September 7, 2021) (AD 2021-19-08).

**(c) Applicability**

This AD applies to the following Robinson Helicopter Company (Robinson) helicopters, certificated in any category:

- (1) Robinson Model R44 and R44 II helicopters with a tail rotor blade (blade) part number (P/N) C029-3 with serial number (S/N) 9410 through 9909 inclusive, installed;
- (2) Robinson Model R44 and R44 II helicopters with a blade P/N C029-3 with S/N 9910 through 10659 inclusive, installed; and
- (3) Robinson Model R66 helicopters with a blade P/N F029-1 with S/N 2410 through 2589 inclusive, installed.

**(d) Subject**

Joint Aircraft System Component (JASC) Code: 6410, Tail Rotor Blades.

**(e) Unsafe Condition**

This AD was prompted by reports of cracked blades. The FAA is issuing this AD to detect and prevent cracks in the affected blades. The unsafe condition, if not addressed, could result in reduced controllability and subsequent loss of control of the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

- (1) Before further flight after the effective date of this AD and thereafter before each flight, check each blade at the leading edge for a crack. This action may be performed by the owner/operator (pilot) holding at least a private pilot certificate and must be entered into the aircraft records showing compliance with this AD in accordance with 14 CFR 43.9(a) and 14 CFR 91.417(a)(2)(v). The record must be maintained as

required by 14 CFR 91.417, 121.380, or 135.439.

(2) If there is any crack, before further flight, remove the blade from service.

(3) For helicopters identified in paragraph (c)(1) of this AD, within 3 months after September 22, 2021 (the effective date of AD 2021-19-08) remove from service any blade identified in paragraph (c)(1) of this AD.

(4) For helicopters identified in paragraphs (c)(2) and (3) of this AD, within 6 months after the effective date of this AD, remove from service any blade identified in paragraph (c)(2) or (3) of this AD, as applicable to your model helicopter.

(5) For helicopters identified in paragraph (c)(1) of this AD, as of September 22, 2021 (the effective date of AD 2021-19-08), do not install a blade identified in paragraph (c)(1) of this AD on any helicopter.

(6) For helicopters identified in paragraphs (c)(2) and (3) of this AD, as of the effective date of this AD, do not install a blade identified in paragraph (c)(2) or (3) of this AD, as applicable to your model helicopter, on any helicopter.

#### **(h) Special Flight Permits**

Special flight permits are prohibited.

#### **(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Los Angeles ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: 9-ANM-LAACO-AMOC-REQUESTS@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) AMOCs approved previously for AD 2021-19-08 are approved as AMOCs for the corresponding requirements in paragraph (g) of this AD.

**(j) Related Information**

For more information about this AD, contact James Guo, Aerospace Engineer, Airframe Section, Los Angeles ACO Branch, Compliance & Airworthiness Division, FAA, 3960 Paramount Blvd., Lakewood, CA 90712; telephone (562) 627-5357; email james.guo@faa.gov.

**(k) Material Incorporated by Reference**

None.

Issued on September 9, 2022.

Christina Underwood, Acting Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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